

May 16, 2001

CERTIFIED MAIL/
RETURN RECEIPT REQUESTED

Century Aluminum Company
c/o Gerald Kitchen, Esq.
Executive Vice President, General Counsel
2511 Garden Road, Suite A-200
Monterey, CA. 93940-5331

Christopher Colman, Esq.
Amerada Hess Corporation
One Hess Plaza
Woodbridge, New Jersey 07095

Virgin Islands Alumina Company (VIALCO)
c/o Eric Schweitzer, Counsel
Ogletree, Deakins, Nash, Smoak & Stewart, P.C.
P.O. Box 11206
Columbia, South Carolina 29211

ALCOA World Alumina, L.L.C. (ALCOA)
St. Croix Alumina L.L.C. (SCA)
c/o Marc Ross, Counsel for ALCOA and SCA
ALCOA Corporate Center
201 Isabella Street at 7th Street Bridge
Pittsburgh, PA. 15212-5858

Janet Weller, Esq..
Counsel for Hess, HOVENSA
and HOVIC
Cleary, Gottlieb, Steen & Hamilton
2000 Pennsylvania Avenue, N.W.
Washington, D.C. 20006-1801

Lockheed Martin Corporation
c/o Mary Morningstar, Esq.
Assistant General Counsel
6801 Rockledge Drive
Bethesda, MD. 20817

VID090302084

Re: Administrative Order on Consent, Docket No. RCRA-02-2001-7301
St. Croix Alumina Facility, St. Croix, U.S.V.I.

Dear Messrs. Kitchen, Schweitzer, Ross, Colman, Weller and Morningstar:

Please find enclosed a copy of the Administrative Order on Consent ("AOC") in the above-referenced matter, signed by the Acting Regional Administrator of the United States Environmental Protection Agency ("EPA"), Region 2.

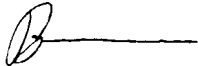
Pursuant to Section XIII, Paragraph 53 of the AOC, the effective date of this Order is fourteen (14) calendar days after the date the AOC is signed by EPA. Since the AOC was signed on May 10, 2001, the effective date of the AOC is May 24, 2001. All obligations under the Order are measured from this effective date.

As a reminder, the following are obligations that will become due shortly under the Order. Under Section VII (Project Coordinators and Project Operating Committee) of the AOC, specifically paragraphs 35 and 36, Respondents are required to designate a Project Coordinator and an alternate within ten calendar days of the effective date of this Order, and shall designate a Project Operating Committee within twenty calendar days of the AOC. Additionally, under Section XI (Work to Be Performed) a PSPH Plume Remediation Work Plan is due within sixty calendar days of the effective date of this AOC.

Please also find enclosed a copy of EPA's Response (dated April 26, 2001) to Public Comments concerning the AOC.

If you have any questions, please call me at (212) 637-3224.

Sincerely yours,



Bruce Aber
Assistant Regional Counsel

Enclosures

cc: Hollis Griffin, VIDPNR

bcc: Carl Soderberg (CEPD)
Jim Casey (CEPD)
George Pavlou (DEPP) (w/o enclosure)
Raymond Basso (DEPP) (w/o enclosure)
Timothy Gordon (DEPP)
Hanna Maciejko (DEPP-RPB) (for Reg. 2 file room)
Nina Habib Spencer (2CD-PAT)
Bruce Aber (ORC-WTS)

In the Matter of St. Croix Alumina, L.L.C., et al., Docket No. RCRA-02-2001-7301

CERTIFICATE OF SERVICE

I certify that I have this day caused to be sent the foregoing Administrative Order on Consent ("AOC"), dated May 16, 2001, bearing the above-referenced docket number, in the following manner to the addresses listed below:

Copy by Certified Mail/
Return Receipt Requested:

Century Aluminum Company
c/o Gerald Kitchen, Esq.
Executive Vice President, General Counsel
2511 Garden Road, Suite A-200
Monterey, CA. 93940-5331

Christopher Colman, Esq.
Amerada Hess Corporation
One Hess Plaza
Woodbridge, New Jersey 07095


Virgin Islands Alumina Company (VIALCO)
c/o Eric Schweitzer, Counsel
Ogletree, Deakins, Nash, Smoak & Stewart, P.C.
P.O. Box 11206
Columbia, South Carolina 29211

ALCOA World Alumina, L.L.C. (ALCOA)
St. Croix Alumina L.L.C. (SCA)
c/o Marc Ross, Counsel for ALCOA and SCA
ALCOA Corporate Center
201 Isabella Street at 7th Street Bridge
Pittsburgh, PA. 15212-5858

Janet Weller, Esq..
Counsel for Hess, HOVENSA
and HOVIC
Cleary, Gottlieb, Steen & Hamilton
2000 Pennsylvania Avenue, N.W.
Washington, D.C. 20006-1801

Lockheed Martin Corporation
c/o Mary Morningstar, Esq.
Assistant General Counsel
6801 Rockledge Drive
Bethesda, MD. 20817

Dated: 5-16-01
New York, New York


Doris Ahearn
Secretary

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2

-----X	:
In the Matter of	:
St. Croix Alumina, L.L.C.,	:
ALCOA World Alumina, L.L.C.,	:
Virgin Islands Alumina Company,	:
Century Aluminum Company, Inc.,	:
Lockheed Martin Corporation,	:
Hess Oil Virgin Islands Corp., and	:
HOVENSA, L.L.C.,	:
Respondents.	:
Proceeding Under Section 7003 of the Solid	:
Waste Disposal Act, as amended.	:
-----X	:

**ADMINISTRATIVE ORDER
ON CONSENT**

Docket No. RCRA-02-2001-7301

I. JURISDICTION

1. This Consent Order (the "Order" or "Consent Order") is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 7003 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 and the Hazardous and Solid Waste Amendments of 1984 (collectively referred to hereinafter as "RCRA" or "the Act"), 42 U.S.C. Section 6973. The authority vested in the Administrator has been duly delegated to the Regional Administrator of EPA Region 2 by EPA Delegation No. 8-22-C, dated May 11, 1994.
2. This Consent Order with EPA is entered into voluntarily by the Respondents listed in Section II. This Consent Order documents the commitment of the Respondents to work together with EPA to implement action as provided in this Order. By signing this Order, the Respondents consent to issuance of this Order.

3. The United States Virgin Islands (USVI) Government has been given notice of the issuance of this Consent Order pursuant to Section 7003(a) of RCRA, 42 U.S.C. § 6973(a).

4. This Consent Order is issued to the Respondents identified below.

II. RESPONDENTS

5. Respondents are: St. Croix Alumina, L.L.C. (SCA), ALCOA World Alumina, L.L.C. (formerly known as ALCOA Alumina and Chemicals, L.L.C.) (ALCOA), Virgin Islands Alumina Company (VIALCO), Century Aluminum Company, Inc. (Century), Lockheed Martin Corporation (Lockheed Martin), Hess Oil Virgin Islands Corp. (HOVIC), and HOVENSA, L.L.C. (HOVENSA).
6. Respondent SCA has been an operator of the alumina refinery facility since approximately July, 1995, and is located at 1 Estate Anguilla, Kingshill, St. Croix, U.S. Virgin Islands (hereinafter "the Facility"). For purposes of this Order, the Facility shall mean all land, structures, other appurtenances, and improvements on the SCA property, and all SCA-owned contiguous property.
7. Respondent ALCOA has been an owner of the Facility since approximately July, 1995, and its corporate headquarters is located at 201 Isabella Street, Pittsburgh, PA. 15212.
8. Respondent VIALCO purchased the Facility from Martin Marietta Alumina, Inc. (MMA) in May, 1989 and owned and operated the Facility from approximately May, 1989 through July, 1995.
9. Respondent Century became an owner of VIALCO on or about April, 1995, and is located at 2511 Garden Road, Bldg A, Suite 200, Monterey, California 93940.
10. Martin Marietta Corporation (MMC) and/or its subsidiaries Martin Marietta Aluminum, Inc. (MM Aluminum) and MMA, owned and operated the Facility from at least 1972 until approximately May, 1989.
11. MMC, MM Aluminum, and MMA merged into Respondent Lockheed Martin on or about January, 1996. Respondent Lockheed Martin's corporate headquarters is located at 6801 Rockledge Drive, Bethesda, Maryland 20817.
12. Respondent HOVIC formerly owned and operated an oil refinery facility located at Limetree Bay, which is adjacent and contiguous to the eastern boundary of the Facility, from approximately 1967 to 1998. Respondent HOVIC's corporate headquarters is located at 1185 Avenue of the Americas, New York, N.Y. 10036.
13. Respondent HOVENSA assumed ownership and operational control of the HOVIC oil refinery facility on or about October 30, 1998. HOVENSA is 50% owned by HOVIC

and 50% owned by PDVSA V.I., Inc. (a wholly owned subsidiary of Petroleos de Venezuela S.A.). HOVENSA's corporate headquarters is located at 1 Estate Hope, Christiansted, St. Croix, United States Virgin Islands, 00820.

III. PARTIES BOUND

14. This Order shall apply to and be binding upon EPA, the Respondents and the Respondents' agents, successors and assigns. The Respondents shall provide a copy of this Order to each contractor hired to perform work pursuant to this Order and to each person representing the Respondents with respect to the work, within fourteen (14) calendar days after the effective date of the Order or the date such services are retained, whichever date occurs later. Respondents shall condition all contracts entered hereunder upon performance of the work in conformity to the terms of this Order. Respondents or their contractors shall provide written notice of the Order to all subcontractors hired to perform any portion of the work required by this Order. Respondents shall nonetheless be responsible for ensuring that their contractors and subcontractors comply with the requirements of this Order and perform the work contemplated herein in accordance with this Order.

IV. FINDINGS OF FACT

15. A plume of liquid phase separated petroleum hydrocarbons (PSPHs), also known as oil, is floating on top of the groundwater underlying the Facility. A map of the Facility showing the areal extent of the PSPH is set forth in Attachment 1 ("the PSPH Plume"). A plume of PSPH has also been defined on the adjacent oil refinery property currently owned by HOVENSA and previously owned by HOVIC. This latter plume is the subject of a separate ongoing remediation project commenced by HOVIC and is outside the scope of this Order.
16. Prior to the issuance of this Order, twenty-seven (27) monitoring wells were voluntarily installed by Respondents at the Facility. These wells were sampled, and reports were submitted to EPA. Dissolved phase petroleum hydrocarbon constituents ("DPPHC") have been detected within the site investigation wells. The DPPHC has likely resulted from the PSPH Plume underlying the Facility and the PSPH plume underlying the adjacent oil refinery property. Additional investigation wells may be required to define the areal extent, composition and concentration of the DPPHC underlying the Facility.
17. Gas chromatograph analyses of PSPH samples collected in January, 1997 from fourteen wells located on the Facility indicate that the PSPH in the plume was originally released from approximately 1978 to 1989. Eleven of the fourteen samples taken at that time from wells at the Facility indicate that the PSPH release took place from 1978 to 1982.

18. Gas chromatograph analyses of PSPH samples collected in August, 1997 from four wells located at the Facility indicate that the PSPH in the plume was originally released from approximately 1978 to 1991.
19. Sources for the past releases of PSPH which may have contributed to the PSPH Plume at the Facility include fuel storage tanks which contained Bunker C (also known as No. 6 fuel oil), Number 2 fuel oil and Diesel at the Facility and the separate PSPH plume underlying the adjacent oil refinery property.
20. The historical groundwater migration flow under the portion of the Facility where the PSPH plume is located, and under the adjacent HOVENSA property, although predominantly from north to south, also may have had localized southwesterly and northwesterly directions, contributing to the PSPH Plume and the DPPHC beneath the Facility. The natural background water quality of the groundwater beneath the Facility is such that the groundwater is not suitable for either consumption or typical industrial uses due to the high levels of total dissolved solids.
21. Depending upon the hydrogeology and subsurface soils at the Facility, the groundwater, the PSPH Plume, and the DPPHC under the Facility may migrate toward and ultimately discharge into the surface waters of either the Port Alucroix/Krause Lagoon Ship Channel or the Caribbean Sea if no remedial steps are taken. However, there is no current evidence that the PSPH Plume and the DPPHC under the Facility have discharged into either the surface waters of the Port Alucroix/Krause Lagoon Ship Channel or the Caribbean Sea.
22. The PSPH Plume will be carried and moved with the groundwater, although perhaps at a slower velocity than the groundwater. The mobile portion of the Plume can be expected to reduce in mass as it travels due to cohesive properties of the soil.
23. The same migration pathways identified in paragraph 21 will apply to both the PSPH Plume and the DPPHC in the groundwater, although perhaps at different velocities than the groundwater.
24. The PSPH Plume and DPPHC typically contain constituents that may present an endangerment to health or the environment.
25.
 - A. Section 311(b)(3) of the federal Clean Water Act, 33 U.S.C. § 1321(b)(3), prohibits the discharge of oil into or upon the waters of the United States or adjoining shorelines in such quantities as may be harmful.
 - B. In 40 C.F.R. § 110.3, EPA has established that discharges of oil that may be harmful to the public health or the environment, include quantities that,

“(a) Violate applicable water quality standards; or

(b) Cause a film or sheen upon or discoloration of the surface of the water or adjoining shorelines. . . .”

26. The PSPH Plume and DPPHC present in the groundwater under the Facility may present an imminent and substantial endangerment to health or the environment.

V. CONCLUSIONS OF LAW

Based on the above Findings of Fact, and the administrative record, the Regional Administrator of EPA Region 2, has determined as a matter of law, that:

27. The Respondents are “persons” as defined in Section 1004(15) of the Act, 42 U.S. C. § 6903 (15).
28. The PSPH Plume and DPPHC present in the groundwater underlying the Facility constitute “solid waste” within the meaning of Section 7003 of the Act, 42 U.S.C. Section 6973, and as such term is defined in Section 1004(27) of the Act, 42 U.S.C. § 6903 (27).
29. The Respondents have contributed or are contributing to the past or present “handling,” or “disposal” of solid waste at the Facility, as those terms are defined in Sections 1004(3) and (33) of the Act, 42 U.S.C. § 6903 (3 and 33).
30. The Respondents’ past or present “handling,” or “disposal” of solid waste at the Facility may present an imminent and substantial endangerment to health or the environment.
31. The actions required to be taken under this Order are necessary to protect health or the environment.
32. With regard to Section XI (Work To Be Performed) under this Order, Respondent HOVENSA shall be responsible for carrying out only the work requirements under subsection D, Paragraph 49. The other Respondents are jointly and severally liable for carrying out the work requirements under subsections A, B, and C (Paragraphs 42 through 48) and subsection E (Paragraph 50) of Section XI (Work to Be Performed). Compliance or noncompliance by one or more Respondents with any provision of this Order shall not excuse or justify noncompliance by any other Respondent.

VI. DETERMINATION

33. Based on the foregoing FINDINGS OF FACT AND CONCLUSIONS OF LAW, the Regional Administrator of EPA Region 2, upon receipt of evidence that the past and present handling, storage, and disposal of solid waste may present an imminent and

substantial endangerment to health or the environment, has determined that the issuance of this Order is necessary to protect public health and the environment.

VII. ORDER

34. Based on the foregoing FINDINGS OF FACT and CONCLUSIONS OF LAW and the foregoing DETERMINATION, IT IS HEREBY ORDERED THAT:
- a. Respondents shall perform all actions required by this Order, in accordance with the WORK TO BE PERFORMED provisions of this Order, as well as other provisions of this Order, as set forth below; and
 - b. Respondents shall fully cooperate with EPA representatives in carrying out the provisions of this Order.

VIII. PROJECT COORDINATORS AND PROJECT OPERATING COMMITTEE

35. By no later than ten (10) calendar days after the effective date of this Order, EPA and each Respondent will designate a Project Coordinator ("PC"), and at least one alternate who may function in the absence of the designated PC, and shall provide a mailing address for both persons.
36. By no later than twenty (20) calendar days after the effective date of this Order, Respondents shall submit to EPA for approval a written notification designating a Project Operating Committee (POC) consisting of one or more PCs. Each Respondent shall appoint a representative to be on the POC and provide a mailing address to EPA for that representative.
37. EPA's PC and the POC shall be responsible for overseeing implementation of this Order.
38. EPA and the Respondents have the right to change their PCs and alternate PCs, and shall inform all other parties in advance in writing should such change occur. Respondents have the right to change their POC and shall inform EPA in advance in writing should such change occur.
39. EPA has designated Tim Gordon as PC and Matthew Schoen as Alternate PC.

IX. NOTICES

40. A. All written and verbal communications from EPA to the Respondents concerning this Order shall be directed to the designated PC for each Respondent. All written communications from Respondents to EPA, including all notices, documents, reports, and

other correspondence or submissions, shall be directed to: Mr. Raymond Basso, Chief, RCRA Programs Branch, U.S. EPA, 290 Broadway, New York, N.Y. 10007-1866.

B. Additionally, two (2) copies of each notice, document, report and other correspondence or submission required by this Order shall be sent to:

Mr. Tim Gordon
U.S. Environmental Protection Agency, Region 2
RCRA Programs Branch
290 Broadway
New York, New York 10007-1866

C. Furthermore, one (1) copy of each notice, document, report and other correspondence or submission required by this Order shall be sent to each of the following persons at the addresses listed below:

Mr. Jim Casey
U.S. Environmental Protection Agency, Region 2
Caribbean Environmental Protection Division
Federal Building & U.S. Courthouse
5500 Veterans Drive, Rm. 142
St. Thomas, U.S. Virgin Islands 00802

Mr. Hollis Griffin
Virgin Islands Department of Planning and Natural Resources
Division of Environmental Protection
1118 WaterGut Homes
Christiansted, St. Croix, U.S. Virgin Islands 00820-5065

X. RETENTION OF RECORDS

41. The Respondents shall maintain all records relating to EPA's Findings of Fact in this document, including but not limited to, all records related to the PSPH and DPPHC contamination at the Facility and work to be performed under the Order, as well as all documents responsive to EPA's RCRA Section 3007 information request letters issued in November 1998 and/or June 1999. The Respondents shall also maintain all records pertaining to this Order and its implementation, including the work to be performed pursuant to this Order. Each Respondent shall make the above records available to EPA for inspection upon request. Such records shall be maintained while this Order is in effect and for three (3) years following termination of this Order pursuant to Section XXVI below.

XI. WORK TO BE PERFORMED

A. PSPH Plume Remediation

42. A. Within 60 calendar days of the effective date of this Order, the POC shall submit to EPA for its review and approval a draft work plan to remediate the PSPH Plume floating on the groundwater underlying the Facility. This "PSPH Plume Remediation Work Plan" shall include a complete proposal for implementing PSPH Plume recovery and /or other remedial measures including: management of the recovered PSPH and groundwater; a definition of the proposed PSPH Plume clean-up objective; an estimation of the time period to achieve the clean-up objective; and a reporting and implementation schedule.
- B. The draft PSPH Plume Work Plan shall be developed in accordance with the following: Joint Technical Proposal, consisting of the following three documents: a February 5, 1997 work plan entitled "St. Croix Alumina L.L.C. (Formerly VIALCO) Hydrocarbon Recovery Plan; Hess Virgin Islands Corp."; an addendum, dated May 26, 2000, setting out a proposal to remediate the PSPH Plume at the Facility; and a second addendum, dated August 15, 2000, which supplements the May 26, 2000 addendum and addresses management at the adjacent oil refinery property of the recovered petroleum product and groundwater.
43. Within 30 calendar days of EPA's written approval of the PSPH Plume Remediation Work Plan, the POC shall commence implementation of the tasks in the PSPH Plume Remediation Work Plan.
44. Within 120 calendar days of completion of all tasks in the approved PSPH Plume Remediation Work plan, the POC shall submit to EPA for review and approval a draft Final Report on the PSPH Plume remediation. The draft Final Report shall contain recommendations as to whether additional monitoring, investigation or recovery with respect to the PSPH Plume are required, and, if required, a proposal for such actions.

B. DPPHC Work Plan

45. Within 120 calendar days of the effective date of this Order, the POC shall submit to EPA for its review and approval a draft work plan to adequately characterize the composition and areal extent of the DPPHC related to the PSPH Plume and to evaluate the risks posed to human health and the environment by the DPPHC ("DPPHC Work Plan"). The draft DPPHC Work Plan shall include proposals for any additional investigation work necessary to adequately characterize the composition and areal extent of the DPPHC so that any risks can be accurately assessed. The DPPHC Work Plan shall contain a reporting and implementation schedule.
46. Within 30 calendar days of EPA's written approval of the DPPHC Work Plan, the POC shall commence its implementation.

47. Within 120 calendar days of completion of all tasks in the approved DPPHC Work Plan, the POC shall submit to EPA for review and approval a draft Final Report on the composition and areal extent of the DPPHC related to the PSPH Plume and an evaluation of threats to human health and the environment posed by the DPPHC. The draft Final Report shall contain recommendations as to whether additional monitoring, investigation or remediation with respect to the DPPHC are required, and if required, a proposal for such actions.

C. Progress Reports

48. Commencing within 90 calendar days of the effective date of this Order, and every 90 days thereafter until termination of this Order, the POC shall submit written Quarterly Progress Reports summarizing all activities implemented pursuant to the requirements of this Order. These progress reports shall not replace or be in lieu of the final reports required under paragraphs 44 and 47 above. The quarterly progress reports shall not be subject to EPA approval. The time for submittal of the quarterly progress reports may be extended by the EPA PC in writing for good cause shown.

D. Management of Recovered Petroleum and Groundwater

49. The requirements of this paragraph 49 shall apply only to Respondent HOVENSA. HOVENSA shall take the steps needed to, and agrees to, receive and manage at the adjacent petroleum refinery the commingled and/or phase separated petroleum and groundwater recovered at the Facility as a result of remediation of the PSPH Plume and DPPHC pursuant to this Order. HOVENSA shall perform the work described in this paragraph in conformance with the Second Addendum to the St. Croix Alumina L.L. C. (former VIALCO) Hydrocarbon Recovery Plan dated August 15, 2000. HOVENSA shall compensate the other Respondents by paying fair market value for the petroleum recovered and shall manage and use the recovered petroleum in accordance with the Second Addendum. EPA may, upon written request from HOVENSA specifying reasonable grounds therefor, allow for management of the commingled fluid and the recovered petroleum in a manner different from that set forth in the Second Addendum.

E. EPA Approvals of Work Plans and Reports

50. With the exception of reports under paragraph 48, all work plans and reports required under Paragraphs 42 through 47 of this Order shall be subject to EPA's review and approval. Any requests for modification of those approved work plans and/or reports, shall be submitted in writing and shall be subject to EPA's review and approval. All approvals by EPA of work plans and/or reports required under paragraphs 42 through 47 of this Order, and all modifications, if any, must be made in writing by either the Chief, RCRA Programs Branch, EPA Region 2, or EPA's designated Project Coordinator or Alternate Project Coordinator.

XII. EMERGENCY PROVISIONS

51. In the event the Respondents identify an immediate and substantial threat to human health and the environment, related to or arising out of the PSPH Plume or the DPPHC, the Respondents shall immediately notify EPA orally or electronically, and in writing within forty-eight (48) hours, summarizing the available information on immediacy and magnitude of the potential threat to human health and the environment. The Respondents shall thereafter submit to EPA for approval, within fourteen (14) calendar days, a plan to mitigate this threat. EPA will approve or modify this plan, and Respondents shall implement this plan as approved or modified by EPA. In the case of an extreme emergency, Respondents may act as they deem appropriate at their own risk.
52. If EPA determines that activities undertaken by Respondents pursuant to this Order, whether in compliance or non-compliance with this Order have caused or may cause a release of a solid or hazardous waste, or hazardous constituent, or may pose a substantial threat to human health and/or the environment, EPA may direct Respondents in writing to stop further implementation of this Order, or a portion of this Order, for such period of time as may be necessary to abate any such release or threat and/or undertake any action which EPA determines to be necessary.

XIII. EFFECTIVE DATE

53. The effective date of this Order shall be fourteen (14) calendar days after the date the Order is signed by the Regional Administrator, EPA Region 2. EPA will make all reasonable efforts to notify Respondents in a timely manner of the date of signing of this Order.

XIV. RESERVATION OF RIGHTS

54. EPA expressly reserves, without limitation, all of its statutory and regulatory powers, authorities, rights, remedies and defenses, both legal and equitable, including the right to seek injunctive relief, cost recovery, monetary penalties, and/or punitive damages.
55. This Order shall not be construed as a covenant not to sue, or as a release, waiver or limitation of any rights, remedies, defenses, powers and or authorities which EPA has under RCRA, the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), or any other statutory, regulatory or common law authority of the United States.
56. This Order shall not limit or otherwise preclude EPA from taking any additional legal action against any of the Respondents, or other parties, should EPA determine that any such additional legal action is necessary or warranted.

57. In the event EPA determines that Respondents have failed to perform any portion of the work required by this Order, EPA shall provide written notification of such determination and a description of such noncompliance to Respondents. Respondents shall have thirty (30) days, or such additional time as EPA agrees to in writing, to perform such work. In the event the Respondents fail to perform such work within the appropriate time period, EPA may perform any and all portions of the work as EPA deems necessary to protect human health or the environment. However, prior to performing the work, Respondents may invoke Dispute Resolution procedures set forth in Section XXV to dispute EPA's determination that Respondents failed to perform the work.
58. Notwithstanding compliance with the terms of this Order, the Respondents are not released from liability for the costs of any response actions taken by EPA. EPA reserves the right to seek reimbursement from the Respondents for any costs incurred by the United States.

XV. PUBLIC PARTICIPATION

59. EPA reserves the right, in its sole discretion, to provide for public notice, opportunity for public meeting in the affected area, and a reasonable opportunity for public review and comment. Following receipt of a written request from EPA, the POC shall make any non-privileged documents developed pursuant to the requirements of this Order available for public review and comment. Additionally, as requested by EPA, the POC shall assist EPA in effectuating the above-described public notice, public meeting, and/or public review and comment.

XVI. STIPULATED PENALTIES

60. Unless Respondents are excused under the "Force Majeure and Excusable Delay" provision of the Order, or unless the schedule is adjusted as otherwise provided under the terms of this Order, Respondents shall pay a stipulated penalty for failure to comply with any requirement, term, or condition set forth in or required by this Order. The stipulated penalty for each non-complying act is as follows:

<u>Period of Failure to Comply</u>	<u>Penalty for Noncompliance per Day</u>
1st through 7th day	\$250.00
8th through 30th day	\$1,500.00
31 st day through 60th day	\$3,000.00
61 st day and thereafter	\$5,000.00

A. Stipulated penalties shall be paid by cashier's or certified check, payable to the Treasurer, United States of America, and mailed to the EPA - Region 2 (Regional Hearing Clerk), P.O. Box 360188M, Pittsburgh, Pennsylvania 15251. Said payment(s) shall be identified

as a stipulated penalty being paid pursuant to this Order and shall reference the Docket Number set forth on the title page of this Order.

B. All stipulated penalties begin to accrue on the day each act of noncompliance with any requirement, term, or condition set forth in or required by this Order first takes place. Said stipulated penalties shall continue to accrue through, and including, the day on which any failure to comply with such requirement, term, or condition is remedied. Nothing herein shall preclude, or is intended to preclude, the simultaneous accrual of separate stipulated penalties for each separate act of noncompliance with this Order. Penalties shall accrue regardless of whether EPA has notified the Respondents of the act or acts of non-compliance, but need only be paid upon demand. The Respondents are jointly and severally responsible for any stipulated penalty payment due under this Order.

C. After receipt of a demand notice from EPA for stipulated penalties pursuant to this Section of the Order, Respondents may within thirty (30) days of such demand, provide EPA with a written explanation of why they believe the stipulated penalties are not appropriate for the act(s) of non-compliance cited by EPA. Such written explanation shall be sent to: Mr. Raymond Basso, Chief, RCRA Programs Branch, U.S. EPA, 290 Broadway, New York, NY 10007-1866.

D. The Chief of the RCRA Programs Branch may, in his sole discretion, reduce or eliminate such stipulated penalties based on the Respondents' written explanation as specified in C., immediately above. If the Chief does not eliminate the stipulated penalties, then EPA will again notify Respondents that the original or reduced stipulated penalties must be paid by the Respondents. Unless Respondents invoke Dispute Resolution under Section XXV of this Order, the Respondents shall pay the stipulated penalties as set forth in EPA's notice pursuant to this sub-section within thirty (30) days of receipt of the notice.

E. All penalties owed to EPA under this Section shall be due and owing as of the date of the Respondents' receipt of the notice, described in C., above. Interest shall also accrue on any amount not paid when due at the rate established by the Secretary of the Treasury pursuant to 31 U.S.C. § 3717. EPA's delay or failure to send such notice in no way affects EPA's right to collect such funds.

F. If the Respondents fail to pay stipulated penalties as required under this Order, EPA may refer this matter to the Department of Justice and/or Department of Treasury for collection under applicable law with respect to the Respondents. Nothing in this section, however, limits, or shall be construed as limiting, any rights or remedies available to EPA to enforce this Order and to seek compliance with the terms and conditions of this Order or any other applicable law or regulation.

XVII. NON-RELEASE OF OTHER CLAIMS AND PARTIES

61. Nothing in this Order shall constitute, or be construed to constitute, a release from any

claim, cause of action or demand in law or equity brought by EPA against any person, firm, partnership, or corporation for any liability it may have arising out of, or relating in any way to, the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituent, hazardous substance, solid waste, hazardous waste, pollutant, or contaminant found at, taken to, taken from, or emanating from or to the Facility or the adjacent HOVENSA oil refinery property.

XVIII. INDEMNIFICATION OF THE UNITED STATES GOVERNMENT

62. The Respondents shall indemnify, save and hold harmless the United States Government, its agencies, departments, agents, and/or employees, from any and all claims or causes of action arising from or on account of acts or omissions of the Respondents or their agents, independent contractors, receivers, trustees, subcontractors or successors and/or assigns in carrying out activities required by this Order. This indemnification shall not be construed as in any way affecting or limiting the rights or obligations of the Respondents or the United States under their various contracts or statutes.

XIX. OTHER APPLICABLE LAWS

63. The Respondents shall undertake all actions required by this Order in accordance with the requirements of all applicable local, territorial, state and federal laws and regulations. Respondents shall be responsible for timely application for and diligent pursuit of obtaining all permits or approvals necessary to perform the work required by this Order.

XX. SEVERABILITY

64. If any provision or authority of this Order or the application of this Order to any party or circumstance is found to be invalid, or is temporarily stayed, the remainder of this Order shall remain in force and shall not be affected thereby.

XXI. FORCE MAJEURE AND EXCUSABLE DELAY

65. Respondents shall perform all the requirements of this Order within the time limits set forth, approved, or established herein, unless the time limit is modified pursuant to Paragraph 77, or unless the performance is prevented or delayed solely by events which constitute a force majeure. A force majeure is defined as any event arising from causes not reasonably foreseeable and beyond the control of the Respondents which could not be overcome by due diligence and which delays or prevents performance by a date required by this Order. Such events do not include unanticipated or increased costs of performance, changed economic circumstances, or normal precipitation events. For purposes of this Order, force majeure events include strikes, hurricanes, and tropical

storms.

66. Respondents shall notify in writing the EPA Project Coordinator within ten (10) calendar days after becoming aware of any event which is known, or should be known, to have constituted a force majeure. Such notice shall provide available information on the estimated length of delay, including necessary demobilization and remobilization, its causes, measures taken or to be taken to minimize the delay, and an estimated timetable for implementation of these measures. Respondents must adopt all reasonable measures to avoid and minimize the delay. Failure to comply with the notice provision of this section shall constitute a waiver of the Respondents' right to assert a force majeure and shall be grounds for EPA to deny an extension of time for performance.
67. After receiving notice that Respondents are invoking the force majeure provisions of this Order, EPA shall respond in writing indicating either EPA's agreement that the event constitutes a force majeure or its disagreement and the reasons therefore. A single Respondent may provide notice on behalf of one or more Respondents.
68. If EPA and the Respondents agree that a force majeure has occurred, the time for performance may be extended, upon EPA approval, for a period equal to the delay resulting from such circumstances or such longer time as EPA determines appropriate. This shall be accomplished through written amendment to this Order, or modifying the schedule in a previously approved work plan. Such an extension or modification will not alter the schedule for performance or completion of any other tasks required by this Order unless these are also specifically altered in accordance with the Modification Section of this Order, or by modifying a previously approved work plan.
69. In the event that EPA and the Respondents cannot agree that any delay or failure has been or will be caused by a force majeure, or if there is no agreement on the length of the extension, the dispute will be resolved in accordance with the Dispute Resolution provisions contained in this Order.

XXII. ON-SITE AND OFF-SITE ACCESS

70. Until this Order is terminated, Respondents agree to provide EPA and its representatives, authorized designees, employees, agents, contractors, subcontractors, or consultants access at all reasonable times to the Facility and adjacent properties which are or have been owned or operated by one or more of the Respondents for the purpose of conducting any activity pursuant to the Order, including but not limited to, the following purpose(s): observing activities at the Facility related to performance of the work required by the Order, conducting sampling or monitoring relating to the PSPH Plume or the DPPHC, and verifying information or data relating to the Order.
71. Upon request, Respondents shall make available to EPA for inspection, copying, or photographing all non-privileged records, files, photographs, documents, or any other

non-privileged writing, including monitoring and sampling data, that pertain to any work relating, or undertaken pursuant, to this Order.

72. To the extent that work required by this Order must be performed on property not owned or controlled by any of the Respondents, Respondents shall use best efforts to obtain "Site Access Agreements" to perform such work within thirty (30) days of the date the Respondents become aware or should be aware of the need to perform such work. Any such access agreement shall provide for reasonable access by EPA. In the event that Site Access Agreements are not obtained within the thirty (30) day period, Respondents shall notify EPA, in writing, documenting their best efforts to obtain such agreements.
73. Nothing in this Order shall be construed to limit or otherwise affect EPA's right of access and entry pursuant to any applicable laws and regulations, including the Act and CERCLA.
74. Nothing in this Order shall be construed to limit or otherwise affect Respondents' liabilities and obligations to perform corrective action, including corrective action beyond the Facility, notwithstanding the lack of access.

XXIII. NO FINAL AGENCY ACTION

75. Notwithstanding any other provision of this Order, no action or decision by EPA pursuant to this Order, including without limitation decisions of the Regional Administrator of Region 2, or any authorized representative of EPA shall constitute final agency action giving rise to any rights of judicial review prior to the United States' initiation of a judicial action for a violation of this Order, which may include an action for penalties, an action to compel Respondents' compliance with the terms and conditions of this Order, or such other relief as may be available at law.

XXIV. MODIFICATION

76. This Order may be modified/amended by Respondents and EPA. Such amendment(s) shall be in writing, shall first be signed by each Respondent, and shall have as an effective date, the date of signature by the Regional Administrator of Region 2.
77. Notwithstanding the above, EPA's Project Coordinator and Respondents' POC may agree to changes in the scheduling of events. Any such changes must be requested in writing by the Respondents and be approved in writing by EPA's Project Coordinator.
78. No informal advice, guidance, suggestions, or comments by EPA regarding reports, plans, specifications, schedules, and any other writing submitted by the Respondents will be construed as an amendment or modification to this Order.

XXV. DISPUTE RESOLUTION

79. EPA and the Respondents shall use their best efforts to informally and in good faith resolve all disputes and differences of opinion. Notwithstanding the above, if Respondents disagree, in whole or in part, with any disapproval or modification or other decision or directive made by EPA pursuant to this Order, Respondents shall submit written notice and submission to EPA's Director of Division of Environmental Planning & Protection (DEPP) ("EPA's Director"); with a copy to the other EPA persons listed in paragraph 40 B., above, of their objections and the basis (bases) therefor within thirty (30) days of receipt of EPA's disapproval, modification, decision, or directive. Said notice and submission shall set forth the specific points of the dispute, the position Respondents are maintaining, the basis (bases) for the position, and any matters Respondents consider necessary for EPA's determination. Within sixty (60) days of the EPA Director's receipt of the Respondent's written notice and submission invoking Dispute Resolution pursuant to this Order, or by such other date as may be agreed upon by the parties, EPA's Director of DEPP shall provide to Respondents in writing his or her decision on the pending dispute and the basis for his or her decision, which decision shall be binding on EPA and the Respondents. EPA and the Respondents may continue to confer and to use informal efforts to resolve the dispute during the period that EPA's final determination is pending.
80. The existence of a dispute as defined herein, and EPA's consideration of such matters as placed into dispute, shall excuse, toll, or suspend during the pendency of the dispute resolution process the compliance obligation or deadline which is in dispute and any other obligation or deadline which is demonstrably dependent on the matter in dispute, and EPA shall not seek to assess a penalty for noncompliance with the obligation or deadline for the period of time during which the obligation or deadline was excused, tolled, or suspended, regardless of the decision on the dispute, so long as EPA determines that the dispute was brought in good faith.

XXVI. TERMINATION

81. This Order and all of its terms and provisions shall remain in effect until all of the activities called for by the Order are completed and Respondents are so notified in writing by the EPA. Such termination notice shall be signed by the Regional Administrator of Region 2. EPA will make all reasonable efforts to provide the termination notice to the Respondents in a timely manner. Respondents may request that EPA Region 2 provide Respondents with such a notice, and shall supply EPA with such information, including certifications, as EPA may specify in connection with action on such request.

XXVII. ENFORCEMENT

82. The failure of the Respondents to comply with any provision of this Order may be considered a violation of this Order. Such violation may give rise to an enforcement

action pursuant to Section 7003(b) of the Act, 42 U.S.C. § 6973(b), for civil penalty or other relief as appropriate.

83. Nothing herein shall preclude EPA from taking any additional enforcement actions, and/or such other actions as it may deem necessary for the abatement or prevention of an imminent threat to public health or the environment arising from conditions at the Facility. Nor shall EPA be precluded from taking any such other enforcement actions as EPA may deem necessary based on additional information about conditions at the Facility or under other environmental laws.

XXVIII. GENERAL PROVISIONS

84. Nothing in this Order constitutes a satisfaction or release from liability with respect to any conditions or claims arising as a result of past, current or future operations, ownership or use of the Facility or adjacent properties by the Respondents, their agents, officials, successors or assigns.
85. Nothing in this Order affects any right, claim, interest, defense or cause of action of EPA with respect to the Respondents, other than those causes of action and matters addressed by this Order.

XXIX. CONSENT

86. The Respondents consent to and agree not to contest EPA's jurisdiction to issue, enforce, or compel compliance with, any term of this Consent Order.
87. The Respondents consent to the issuance of this Order and its terms, and agree to undertake all actions required by the terms and conditions of this Order. The Respondents consent to the issuance of this Order, as an Order, pursuant to Section 7003 of RCRA, 42 U.S.C. § 6973, and explicitly waive any rights they may have to request a hearing on this matter.
88. By signing this Consent Order and taking actions under this Consent Order, the Respondents do not necessarily agree with the Findings of Fact, Conclusions of Law, or Determinations. Further, acts pursuant to this Consent Order by Respondents shall not be considered an admission of liability and this Order shall not be admissible as evidence against the Respondents in any judicial or administrative proceeding other than a proceeding by the United States, including EPA, to enforce this Consent Order, or to enforce a judgment relating to this Order. The Respondents agree not to contest the validity or terms of this Consent Order in any action brought by EPA to enforce this Consent Order or to enforce a judgment relating to this Order.

89. The Respondents agree not to contest and agree to waive any defense concerning the validity of this Order, or any particular provision contained herein.
90. The signatory to this Order for each Respondent certifies that he or she is fully authorized to sign this Order on behalf of the specific Respondent.

Administrative Order on Consent, Docket No. RCRA-02-2001-7301

Signatory Page for St. Croix Alumina, L.L.C.

By: Thomas G. Russell

Date: Nov. 16, 2000

Thomas G. Russell

Signatory's Name (Print):

Title: LOCATION MANAGER

Company: St. Croix Alumina, L.L.C.

Administrative Order on Consent, Docket No. RCRA-02-2001-7301

Signatory Page for ALCOA Alumina and Chemical, L.L.C.

By: _____

Date: 11/27/00



Signatory's Name (Print):

Title: R. D. President A.W.A Atlantic

Company: Alcoa World Alumina

Administrative Order on Consent, Docket No. RCRA-02-2001-7301

Signatory Page for Virgin Islands Alumina Company

By:



Date: 30 November 2000

Gerald J. Kitchen

Signatory's Name (Print):

Title: Vice President

Company: Virgin Islands Alumina Company

Administrative Order on Consent, Docket No. RCRA-02-2001-7301

Signatory Page for Century Aluminum Company, Inc.

By: 

Date: 30 November 2000

Gerald J. Kitchen


Signatory's Name (Print):

Title: Executive Vice President

Company: Century Aluminum Company

Administrative Order on Consent, Docket No. RCRA-02-2001-7301

Signatory Page for Lockheed Martin Corporation

By: 

Date: 11/30/00

JOHN P. WIGGIN

Signatory's Name (Print):

Title: Director, Corporate ESH Operations

Company: Lockheed Martin Corporation

Administrative Order on Consent, Docket No. RCRA-02-2001-7301

Signature Page for Hess Oil Virgin Islands Corp.

By: ^{CSC} J. Barclay Collins Date: 11/30/00

J. Barclay Collins
Signatory's Name (Print):
Title: Vice President
Company: Hess Oil Virgin Islands Corp.

Administrative Order on Consent, Docket No. RCRA-02-2001-7301

Signature Page for HOVENSA, L.L.C.

By: *Rene Sagebien* Date: 11/22/00.

CSA

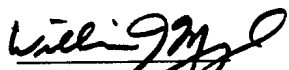
Rene Sagebien

Signatory's Name (Print):

Title: President / C.O.O.

Company: HOVENSA L.L.C.

It is so Ordered:



William J. Muszynski
Acting Regional Administrator
U.S. Environmental Protection Agency
Region 2
290 Broadway
New York, New York 10007-1866

Date: 5/10/01

ATTACHMENT

1. Map of a portion of the St. Croix Alumina Facility, showing the areal extent of the PSPH Plume (based on February 2000 fluid measurements).

V1D090 302084

April 26, 2001

EPA Responses to Public Comments
St. Croix Alumina, St. Croix VI
RCRA 7003 Administrative Order on Consent (AOC)

As background, a Notice of a Public Comment period on the AOC and a planned public meeting to discuss it were published in Virgin Islands' newspapers on December 18 and 19, 2000. A follow-up press release was issued by EPA on January 11, 2001. The Public Comment Period which commenced on December 18, 2000, was originally scheduled to close on January 31, 2001, but in response to a request for further time to submit public comments, EPA subsequently extended the Public Comment period to February 14, 2001.

The public meeting was held on January 17, 2001 in St. Croix, and attended by approximately 40 people. At the meeting, several persons commented on the AOC, as well as expressed general concerns about other issues not pertaining to the AOC. EPA addressed each comment at the meeting. For a copy of the transcript, please contact Timothy Gordon, at EPA, at (212) 637-4167.

Following the public meeting, EPA received six letters commenting on, or regarding the AOC. These comment letters were received by EPA within the prescribed period for accepting public comments, as mentioned above. Set forth below is a summary description of the comment letters received and EPA's response to those comments.

1. Letter dated January 24, 2001 from Senator Adelbert M. Bryan of the Legislature of the Virgin Islands, No. 1 Lagoon Street Complex, Frederiksted, St. Croix VI 00841

The letter requested that EPA hold a second Public Meeting on the proposed Administrative Order on Consent with St. Croix Alumina, et. al., and also transmitted a letter dated January 22, 2001 from Mr. Percival Edwards of St. Croix Farmers in Action, Inc., P.O. Box 69, Kingshill, VI 00851.

EPA Response: EPA by letter dated January 31, 2001, extended the comment period on the proposed Administrative Order on Consent until February 14, 2001, and offered to schedule conference calls with Senator Bryan and his staff and/or representatives of St. Croix Farmers in Action, Inc. However, EPA did not feel a second public meeting was warranted, since, as mentioned above, the public meeting held on January 17, 2001 was announced by official Public Notices in two territorial newspapers, respectively on December 18 and 19, 2001, and EPA issued a press release on January 11, 2001 further advising the public of the January 17th meeting.

2. Letter dated January 22, 2001 from Mr. Percival Edwards of St. Croix Farmers in Action, Inc., P.O. Box 69, Kingshill, VI 00851

The letter, which was addressed to Senator Adelbert M. Bryan of the Legislature of the Virgin Islands, expressed concern over whether any of the contamination from both St. Croix Alumina [referred to in the letter as ALCOA] and HOVENSA would reach farmland in the Bethlehem

area, and whether the contamination had impacted Estate Profit, Estate Strawberry and Barren Spot and Clifton Hill Areas. The letter also requested that Senator Bryan request that “another public hearing [be held] in order that more local persons may have the opportunity to attend.”

EPA Response: In regards to possible contamination from the St. Croix Alumina (SCA) and HOVENSA facilities impacting the Bethlehem area, and Estate Profit, Estate Strawberry and Barren Spot and Clifton Hill Areas, see responses below to Mr. Edwards letter of February 12, 2001, which was faxed to EPA by Senator Adelbert M. Bryan’s office, and included a “Statement of Public Concern”, signed by approximately 80 individuals. In regards to holding a second Public Meeting, see EPA’s Response above to Senator Bryan’s letter of January 24, 2001.

3. Letter dated January 26, 2001 from Mr. Syed Syedali, of the Department of Planning & Natural Resources (DPNR) of the Government of the Virgin Islands

Specific Comments:

1) for Paragraph 15 of the AOC, DPNR requests clarification as to whether “...the PSPH [phase separated petroleum hydrocarbon] plume sourcing from HOVENSA has migrated across the property line and has commingled with the PSPH plume sourcing from the [St. Croix Alumina] Facility.”

EPA Response: Yes that is correct, and that is why the AOC names both present and former owners and operators of both the alumina facility and the adjacent HOVIC oil refinery [now HOVENSA] as respondents. However, since 1987 HOVIC and subsequently HOVENSA have maintained a groundwater and PSPH recovery system along their western boundary. As of May of 1996 HOVIC acceptably demonstrated to EPA, by groundwater monitoring well results and groundwater modeling studies, that the recovery system maintained hydraulic control along the facility’s western boundary and prevented any further migration of PSPH [also referred to as “oil”] from the HOVIC facility to the SCA property. Based on information and documentation submitted to EPA by Respondent HOVIC (now HOVENSA), EPA has determined that such hydraulic control has been maintained since then.

2) for Paragraph 16 of the AOC, DPNR requests that the work to be performed under the AOC “be broadened to include ...other contaminants such as CVOCs [(commingled ?) volatile organic constituents], heavy metal and other chemicals/materials ..used, stored and disposed at the [St. Croix Alumina] facility.”

EPA response: Volatile organic constituents (VOCs) will be investigated, and if warranted, cleaned-up as part of the “Dissolved Phase Petroleum Hydrocarbon Constituent Work Plan” [DPPHC], pursuant to requirements in Section XI.B of the AOC. Since the AOC involves both present and former owners and operators of both the alumina facility and the adjacent HOVENSA [formerly HOVIC] oil

refinery as respondents, only constituents that are the results of releases from both the alumina facility and the oil refinery are addressed in the AOC. That is why heavy metal constituents and other chemicals/materials used, stored and disposed at the St. Croix Alumina facility are not addressed in this AOC. However, pursuant to Section XIV (Reservation of Rights) of the AOC, contamination from heavy metal constituents and other chemicals/materials used, stored and disposed at the St. Croix Alumina facility, if present, could be addressed under separate actions or authorities by EPA. Also, the AOC does not contain anything which would restrict independent DPNR actions as regards any contamination from heavy metal constituents and other chemicals/materials.

3) for Paragraph 17 of the AOC, DPNR expresses concern about the accuracy of petroleum hydrocarbon [age] dating.

EPA response: EPA generally agrees with DPNR's statement that petroleum hydrocarbon [age] dating "...is not an exact science." Therefore, any dates for releases cited in the AOC are estimates. These estimates were made only for the purposes of establishing responsibility, pursuant to Section 7003 of RCRA, for the PSPH releases by both present and former owners and operators of both the St. Croix Alumina facility and the adjacent HOVENSA [formerly HOVIC] oil refinery.

4) for Paragraph 20 of the AOC, DPNR expresses concern about the accuracy of the AOC statement regarding groundwater beneath the [St. Croix Alumina] Facility "as not suitable for either consumption or typical industrial uses due to the high levels of total dissolved solids".

EPA response: The statement in paragraph 20 of the AOC is based on information supplied by the present and former owners and operators of both the alumina facility and the adjacent HOVENSA [formerly HOVIC] oil refinery, as well as information in the "Atlas of Ground-Water Resources in Puerto Rico and the U.S. Virgin Islands", U. S. Geological Survey Water-Resources Investigation Report 94- 4198, dated 1996 ("the Ground-Water Atlas"). For example, in Section 4.7.2 of the Ground-Water Atlas, on page 145, it is stated "The Kingshill Marl provides most of the ground water for St. Croix, but the overall quality is poor. The water exceeds the EPA secondary drinking water standards for dissolved solids and chloride; median concentrations are 1,440 mg/L and 560 mg/L respectively." EPA believes that the AOC is accurate in indicating that the natural state of the groundwater underlying and down-gradient of the PSPH plume at the St. Croix Alumina facility, prior to any treatment processes being applied, is not usable for either consumption or typical industrial uses. DPNR has presented no information to the contrary.

5) for Paragraph 21 of the AOC, DPNR expresses concern about the accuracy of assessment of hydrocarbon impacts to the adjacent surface waters.

EPA response: EPA has no information indicating that the Caribbean Sea has been impacted by the PSPH [oil] or DPPHC contamination at St. Croix Alumina. However, full assessment of the PSPH [oil] or DPPHC impacts to the adjacent surface waters, if any, is not necessary prior to EPA signing the AOC. Rather, this will be more fully assessed as part of the PSPH and DPPHC work plans, pursuant to requirements in Section XI (Work to be Performed) of the AOC.

6) for Paragraph 26 of the AOC, DPNR indicates that it believes the PSPH and DPPHC present in the groundwater under the St. Croix Alumina facility is currently an imminent and substantial threat to public health and the environment.

EPA response: Pursuant to paragraph 33 of the AOC, EPA has determined that PSPH [oil] and/or DPPHC contamination at the St. Croix Alumina facility may present an imminent and substantial endangerment to health or the environment, and has determined that the issuance of this AOC is necessary to protect public health and the environment.

7) Other DPNR Comments: In the Conclusions section of its letter, DPNR states, “..we are concerned about non-petroleum contamination, including MTBE sourcing from HOVENSA”

EPA response: MTBE [methyl tertbutyl ether] contamination at HOVENSA is being addressed at that facility, under EPA supervision, pursuant to requirements of its 1999 Resource Conservation and Recovery Act (RCRA) Operating Permit. Specifically it is being addressed as Area of Concern (AOC) 3, as discussed in Condition III.A.4. (c).(3) of the 1999 HOVENSA RCRA Operating permit. Although EPA has no evidence of MTBE being present at the St. Croix Alumina facility; EPA will include it as a constituent to be investigated at the St. Croix Alumina facility as part of the DPPHC work plan, pursuant to requirements in Section XI.B of the AOC.

4. Letter dated February 12, 2001 from Mr. Percival Edwards of St. Croix Farmers in Action, Inc., P.O. Box 69, Kingshill, VI 00851

The letter of February 12, 2001, which was faxed to EPA by Senator Adelbert M. Bryan's office, included a “Statement of Public Concern”, signed by approximately 80 individuals. The statement expresses concern over impacts from contamination at the HOVENSA [formerly Hess Oil Virgin Islands Corp (HOVIC)] and St. Croix Alumina [owned by ALCOA World Alumina LLC] facilities, both located on the south coast of St. Croix.

EPA General Response: As to the general concern expressed in the “Statement of Public Concern”, EPA wishes to assure the citizens of St. Croix that it has rigorously addressed clean-up requirements for any past or present contaminant releases at the HOVENSA [formerly owned and operated by HOVIC] oil refinery, as well as at the adjacent St. Croix Alumina facility

(formerly VIALCO, and Martin Marietta Alumina). Based on all available information, EPA has determined that any past or recent PSPH [oil] releases at those two facilities have not threatened, and are not expected to threaten, the drinking water sources (such as the Barren Spot Well field) supplied by groundwater obtained from the Kingshill aquifer on St. Croix, or other off-site areas on St. Croix.

With regard to underground PSPH [oil] contamination at the HOVENSA [formerly Hess Oil Virgin Islands Corp (HOVIC) oil refinery, initial efforts to cleanup the PSPH [oil] began in 1982 and by 1987 site-wide cleanup was underway. Pursuant to the Resource Conservation and Recovery Act (RCRA) operating permit for the facility, issued by Region 2 in 1988 and reissued in 1999, HOVENSA [and previously HOVIC] has [have] been required to investigate and recover the released underground PSPH [oil] at its site. [Public Notice was given and Public Meetings were held in St. Croix prior to issuance of both the 1988 and 1999 RCRA permits.] HOVENSA is also required to implement measures (hydraulic control) to prevent migration off the HOVENSA site of the underground PSPH [oil] contamination. As of December 2000 [the most recent data], pursuant to its RCRA operating permit requirements which address contamination at its site, HOVENSA, under EPA oversight:

- * has recovered 35.59 million gallons (847,300 barrels [1 barrel = 42 gallons]) of the released underground PSPH [oil], with an estimated 6.06 million gallons (144,400 barrels) of PSPH [oil] currently remaining underground, but being hydraulically contained so as to prevent migration off the HOVENSA site, while continuing to be actively recovered;
- * operates 120 active recovery wells, whose purpose is to recover the underground PSPH [oil] and prevent its off-site migration, and 594 groundwater monitoring and PSPH [oil] observation wells, which monitor the PSPH [oil]'s areal and thickness distribution on a bi-monthly (every two months) basis, and monitor the distribution and concentration of dissolved phase hazardous constituents in the groundwater;
- * samples the groundwater in 6 monitoring wells [which are included in the above 594 monitoring and observation wells] directly along its northern "fence line" every six months to insure that if dissolved hazardous constituents were to migrate towards the Barren Spot well field, they would be detected;
- * since 1994 has been constructing and implementing a major facility-wide groundwater/phase separated [i.e., oil]/dissolved phase modeling project to guide and assess the efficiency of the clean-up, and verify that hydraulic control is being maintained so as to prevent migration of the PSPH [oil] and dissolved constituent plumes off the HOVENSA site; and
- * since 1994 has been implementing a recurring program of pressure testing, and repair or replacement of all underground process sewers and hydrocarbon pipelines, as well a recurring program of internal inspection and testing of all hydrocarbon storage tanks at the facility, in order to prevent future underground releases.

EPA's on-going oversight of HOVENSA's activities indicates that at the present time, the underground PSPH [oil] contamination, as well as any dissolved phase hazardous constituent contamination in the groundwater, are not migrating off the HOVENSA site along its northern, eastern, and western property lines, and do not threaten the drinking water supplies obtained from groundwater in the Kingshill aquifer. However, as mentioned previously, there has been some past migration onto the St. Croix Alumina property.

With regard to the St. Croix Alumina facility, as background, EPA first became aware that there was evidence of PSPH [oil] underlying the St. Croix Alumina facility (formerly VIALCO and Martin Marietta Alumina) in 1994. Initially, EPA believed the PSPH [oil] underlying the St. Croix Alumina facility was caused by releases at the adjacent oil refinery facility owned by HOVIC. Therefore, EPA required HOVIC to delineate the areal and volumetric extent of the PSPH [oil] underlying the St. Croix Alumina facility. Between 1994 and 1997, under EPA oversight, HOVIC installed 27 investigation wells on the St. Croix Alumina property in order to delineate the areal and volumetric extent of the PSPH [oil] underlying the St. Croix Alumina facility.

However, based on subsequent analyses of PSPH [oil] samples from some of those 27 investigation wells, as well as others, EPA now believes that the PSPH [oil] underlying the St. Croix Alumina facility came from fuel storage tanks and other sources located at both the St. Croix Alumina facility and the adjacent HOVIC/HOVENSA oil refinery.

Based on chromatographic analysis, EPA estimates that most of the underground PSPH [oil] underlying the St. Croix Alumina facility was originally released between 1978 and 1989/91 (approximately). However, age dating of release² PSPH [oil] based on chromatographic analysis is not an exact science, and the dates of release are merely estimations made for the purposes of establishing which owner/operators are the likely parties responsible for the releases [i.e., who owned and/or operated the two facilities when the releases occurred].

Any drinking water sources (such as the Barren Spot Well field) are hydraulically upgradient of the PSPH [oil] and dissolved petroleum constituent plumes underlying the St. Croix Alumina facility; therefore, contaminants from those plumes are unlikely to impact drinking water sources. Based on bi-monthly (every two months) gauging of the 27 wells at SCA, EPA has observed no significant movement of the plume of PSPH [oil] under the St. Croix Alumina property since 1997 [when all 27 wells were installed]. Seven of the 27 wells are located on the St. Croix Alumina property north of the plume of PSPH [oil], and any northward movement of the PSPH [oil] plume, or dissolved petroleum constituent plume, towards the Barren Spot well field, or other areas north of St. Croix Alumina, would first be detected in those wells.

However, without remediation, the plume of PSPH [oil] under the St. Croix Alumina facility could, over time, migrate southwards and discharge to the Port Alucroix/Krause Lagoon Ship Channel and the surface waters of the Caribbean Sea. That is why EPA has determined that clean-up of the PSPH [oil] contamination under the St. Croix Alumina facility is necessary, and required the present and former owners and operators of both the alumina facility and the adjacent HOVENSA [formerly HOVIC] oil refinery to enter into the AOC. As discussed

previously, since clean-up of the contamination at the HOVENSA [formerly HOVIC] oil refinery is already required under that facility's 1999 RCRA Operating Permit, it is not included under the AOC.

The St. Croix Farmers in Action "Statement of Concern" also contains specific requests and/or questions, including:

1. A statement that "Some of us reside, graze our livestock....[in].. areas includ[ing] Clifton Hill, Estate Profit, Harvey Project and the Bethlehem farmlands." and "...regardless of the flow of the water, contamination that settles in the soil may easily seep through the soil northward and westward contaminating the water tables on which we rely", and a request that "tests" [wells] be conducted [installed] in "varying locations north and west of the main gut [an intermittent surface water discharge feature] referenced in the [St. Croix Alumina] Order."

EPA Response: Clifton Hill, Estate Profit, and Harvey Project are located approximately three quarters (3/4) to one and a quarter (1 & 1/4) miles north and northwest respectively of the area of the underground PSPH [oil] plume at the SCA facility. Upper Bethlehem and Bethlehem Old Work are located even further northwest and west from the area of the underground PSPH [oil] plume at the SCA facility. Since the topography north and northwest of the area of the underground PSPH [oil] plume at the SCA facility [as well as at HOVENSA] slopes south and/or southeastwards, overland flow of surface oil releases in the area of the SCA facility [as well as HOVENSA] towards the north or northwestwards from the area of the defined PSPH [oil] plume[s], or elsewhere at those facilities is not possible, except in a portion of property owned by SCA that is located north of the Melvin Evans Highway (which does not contain the PSPH [oil] plume or, as far as EPA is aware, areas associated with the alumina refining process). Therefore, although not the subject of this AOC, surface spills of oil at the SCA facility [as well as the HOVENSA facility] would not impact the soils north or northwestwards of the SCA facility, or the Bethlehem Gut area.

Likewise, since the water table potentiometric elevations [the elevations water will rise to without pumping] decrease south and southeastward from the areas of Clifton Hill, Estate Profit, and Harvey Project, as well as Upper Bethlehem and Bethlehem Old Work the direction of groundwater flow, under natural conditions, is from the Clifton Hill, Estate Profit, and the Upper Bethlehem and Bethlehem Old Work areas towards the south, i.e., towards the coast. [Refer to U.S. Geological Survey Water Resources Investigation Report 89-4085, dated 1990 (but based on July 1987 data); also see Figure 3.1.2.E-1 on page 139 of "the Ground Water Atlas" cited previously.] Therefore, it is not possible for the underground PSPH [oil] plume or the dissolved petroleum constituent plumes at the SCA facility [as well as HOVENSA], which is [are] south and southeast of those areas, to impact those areas, unless a massive reversal of the natural groundwater gradient were to occur as a result of excessive groundwater pumping in the Clifton Hill, Estate Profit and Harvey Project, as well as Upper Bethlehem and Bethlehem Old Work areas.

The AOC references no gut or other surface drainage feature, but EPA assumes the statement in the "Statement of Concern" means the petitioners want wells installed north and west of St. Croix Alumina [and HOVENSA since the statement discusses both]. Since there are already 7 wells located on the St. Croix Alumina property north of the plume of PSPH [oil] that are free of PSPH [oil] contamination, EPA feels that additional wells north of the St. Croix Alumina property are not warranted. In addition, since the land west of the St. Croix Alumina property are occupied by a closed and active landfill, and a wastewater treatment plant, additional wells west of the St. Croix Alumina property are not warranted, for the following reasons: contamination underlying the SCA facility is not expected to impact the closed and active landfill and wastewater treatment plant; even if the contamination from the SCA facility were to reach the landfills and wastewater treatment plant, potential receptors are not reasonably expected to be present; and the landfills and wastewater treatment plant themselves could be potential sources for hazardous constituent releases. Twenty seven wells located on the St. Croix Alumina property will be gauged every two months under the requirements of Section XI of the AOC; therefore, any northward or westward movement of the PSPH [oil] plume would first be detected in those wells.

2. The petitioners want to know what medical effects, if any, that any contamination may have on human and animal life. Also, in its February 12, 2001 letter addressed to Mr. Raymond Basso of EPA, the St. Croix Farmers In Action, Inc. state that HOVENSA and ALCOA should be responsible for paying for tests and/or studies of the effects on St. Croix's ecosystem, coral reefs and fishing industry.

EPA Response: EPA has no information or reason to expect that human receptors have been exposed to the PSPH [oil] or DPPHC contamination at St. Croix Alumina [or HOVENSA]. Therefore, no adverse medical impacts should have occurred due to the underground PSPH [oil] contamination at St. Croix Alumina [and HOVENSA]. However, if exposure were to occur, potential adverse human health impacts can occur. Oil and DPPHC typically contain such volatile hazardous constituents as benzene, ethyl benzene, toluene, and xylene, and various semivolatile polycyclic aromatic hydrocarbon (PAH) hazardous constituents. Benzene, ethyl benzene, toluene, xylene and various PAHs can cause adverse effects to human health. Benzene and certain PAHs are known human carcinogens. Human consumption of groundwater contaminated with PSPH [oil] or DPPHC from St. Croix Alumina [and/or HOVENSA] could increase the risk of cancer. In addition, if discharge of groundwater contaminated with PSPH [oil] or DPPHC from St. Croix Alumina [and/or HOVENSA] were to occur to the surface waters of the Port Alucroix/Krause Lagoon Ship Channel and/or the Caribbean Sea, human health impacts could occur through consumption of fish and other receptors such as crabs, shell fish (including bivalves and shrimp) and amphibians (such as frogs) which could bioaccumulate contaminants from the PSPH or DPPHC plumes. However, EPA has no information or reason to expect that human receptors have been exposed to the PSPH [oil] or DPPHC contamination, and EPA has no reason to expect human receptors to be exposed to the PSPH [oil] or DPPHC contamination in the future, especially in light of the actions required by the AOC.

3. The petitioners want to know the effects of the [underground PSPH [oil]] contamination at St. Croix Alumina on Caribbean Sea/fisherman.

EPA Response: EPA has no information indicating that the Caribbean Sea has been impacted by the PSPH [oil] or DPPHC contamination at St. Croix Alumina. Therefore, no adverse impacts should have occurred due to the [underground PSPH [oil]] contamination at St. Croix Alumina and [HOVENSA]. However, if the Caribbean Sea were to be impacted, PSPH [oil] and DPPHC can adversely affect the environment. Adverse impacts to fauna and flora from PSPH [oil] and DPPHC contaminants either in water soluble fractions, dissolved phase, or floating non-aqueous phase liquids (NAPLs), include direct lethal toxicity, direct coating, habitat disruption, tainting, physiological disruption, behavioral disruption, and bioaccumulation. Exposure to contaminants from PSPH [oil] and DPPHC can kill mangrove trees and other vegetation when absorbed through the root system or leaves. Oil can be absorbed in the dermal layer and/or feather of higher animals such as sea-turtles and birds, which can cause death or other adverse affects, as described above, to those animals. Also oil can coat the eggs of animals such as sea-turtles and birds, causing the eggs not to hatch. Groundwater discharge to the surface waters of the Caribbean Sea would constitute the principal transport pathway for the PSPH [oil] and DPPHC to impact the Caribbean Sea. Accordingly, discharges of PSPH [oil] and DPPHC from the groundwater underlaying the SCA facility would have the greatest ecological impact on sea floor sediments, associated interstitial waters and any sessile infaunal and epifaunal organisms which live in or on the sea floor. The sessile infaunal and epifaunal organisms will assimilate PSPH and DPPHC. Certain of these organisms, such as bivalves, readily uptake and bioaccumulate PAHs. As these organisms are eaten up the food chain by fish and birds, the identified endangered and threatened species could be affected. However, as stated above, EPA has no information indicating that the Caribbean Sea has been impacted by PSPH [oil] or DPPHC from the St. Croix Alumina facility.

Refer to "Guadalupe Oil Field Remediation and Abandonment Project, Final Environmental Impact Report", dated March 1998, prepared by Arthur D. Little and Company for County of San Luis Obispo, California.

Refer to "The Fate and Effects of Oil in Freshwater", dated 1989, Edited by J. Green and M.W. Trett, published by Elsevier Applied Science.

4. The petitioners want some provision in the AOC for compensation, and indicate that the companies that are responsible for the contamination should set money aside in the event that harm to the people of the Virgin Islands, and particularly St. Croix, is established.

EPA Response: As stated in EPA's response to Point 2 of the St. Croix Farmer's in Action Statement of Concern, EPA has no information indicating any harm, or reason to expect any harm, to human health from PSPH [oil] and/or DPPHC contamination in the groundwater under the St. Croix Alumina (SCA) facility. Second, the remedy of "monetary compensation" for harm to human health is not within EPA's jurisdiction under

the RCRA statute, as RCRA does not contemplate or provide for compensation for harm to private parties.

Under RCRA, EPA may issue Orders assessing civil penalties for past or present violations, require compliance with provisions of RCRA, or commence civil action for injunctive relief. Additionally, EPA may require owners or operators or other responsible parties to undertake corrective action for releases of solid or hazardous waste. However, the RCRA statute neither authorizes EPA to order monetary compensation from one private party to another nor creates any private or federal cause of action for monetary damages. Thus, even assuming that there was evidence of harm to human health, there cannot be a provision in this RCRA Order requiring respondents to set up a monetary fund to provide monetary compensation to the citizens of the Virgin Islands in the future event that harm to human health is established. Of course, nothing in this Order precludes or preempts the citizens of the Virgin Islands from availing themselves of other legal recourse for monetary compensation. Although there is a citizens suit provision under RCRA, the citizen suit provision does not contemplate or provide a cause of action for monetary compensation.

5. The Statement ends by stating: "We urge you **not** to hastily approve the [St. Croix Alumina] Consent Order until interests of all parties are protected."

EPA Response: EPA's approval of the AOC has not been "hasty", but rather has occurred after due thought and consideration to the interests of the public, as evidenced by the following: a) Notice of a Public Comment period on the AOC and a planned Public Meeting to discuss it were published in Virgin Islands' newspapers on December 18 and 19, 2000; b) A follow-up press release was issued by EPA on January 11, 2001 inviting the public to attend the Public Meeting; c) The Public Meeting was held on January 17th in St. Croix, and attended by approximately 40 people; d) The Public Comment Period which commenced on December 18, 2000, was originally scheduled to close on January 31, 2001, but EPA subsequently extended the Public Comment period to February 14, 2001 to allow for further public comment; e) EPA has carefully considered the concerns expressed at the Public Meeting and in all comment letters, including this "Statement of Concern", received during the Public Comment period; f) During the Public Meeting EPA addressed the concerns expressed by the public at that meeting; For a copy of the transcript, please contact Timothy Gordon, at EPA, at (212) 637-4167; and g) EPA has prepared this Response to address all written comment letters submitted during the Public Comment period. After consideration of all public comments and concerns, EPA still believes that the AOC is necessary to protect human health and the environment.

5. Letter dated February 14, 2001 from Senator Donald G. Cole of the Legislature of the Virgin Islands

General Comment: Statement that the people should be compensated for the value of their natural resources [impacted by the releases], just as the other Respondents are compensated for their recovered petroleum.

EPA Response: EPA has no information, or reason to expect that natural resources outside the SCA Facility have been impacted by the PSPH [oil] and/or DPPHC under the SCA Facility. However, without the actions required by this AOC, adverse impacts to natural resources outside the SCA facility could occur due to the PSPH [oil] or DPPHC at the facility. The compensation provided to the other respondents is consideration in a commercial transaction for the recovered petroleum pursuant to a contractual agreement between HOVENSA and the other respondents, to which EPA is not a party. That type of compensation is wholly different from the type of compensation mentioned in this February 14, 2001 letter, which is tantamount to a claim for damages intended to compensate the people of St. Croix for alleged harm to natural resources. The remedy of "monetary compensation" for alleged harm to the environment is not within EPA's jurisdiction under RCRA.

Under RCRA, EPA may issue Orders assessing civil penalties for past or present violations, require compliance with provisions of RCRA, or commence civil action for injunctive relief. Additionally, EPA may require owners or operators or other responsible parties to undertake corrective action for releases of solid or hazardous waste. However, RCRA neither authorizes EPA to order monetary compensation from one private party to another nor creates any private or federal cause of action for compensation for damages. Thus, even assuming that there was evidence of harm to natural resources, this RCRA Order is not an appropriate mechanism for requiring respondents to provide monetary compensation to the citizens of St. Croix for the value of natural resources. Of course, nothing in this Order precludes or preempts the citizens of the Virgin Islands from availing themselves of other legal recourse for monetary compensation.

Although there is a citizens suit provision under RCRA, the citizen suit provision does not contemplate or provide a cause of action for monetary compensation.

Specific Comments:

Comment (1) states that since "...the original release occurred in 1978 and apparently was not detected until 1997, what measures have been taken to increase the probability of detecting a release?"

EPA Response: Firstly, the contamination at St. Croix Alumina was first reported to EPA in 1994, not 1997. Between 1994 and 1997, under EPA supervision, a program of installing 27 investigation wells to delineate the full extent of the PSPH contamination at St. Croix Alumina was being implemented. That delineation was

not completed until January 1997.

Secondly, as noted previously, the PSPH [oil] contamination at St. Croix Alumina was partially sourced by past releases originating at the HOVENSA (formerly HOVIC) oil refinery. Accordingly, the estimated date of 1978, which is based on chromatographic analysis of PSPH [oil] samples at the SCA facility, could partly have resulted from analysis of PSPH [oil] derived from past releases originating at the HOVENSA (formerly HOVIC) oil refinery. The PSPH [oil] releases at HOVENSA were first reported to EPA in 1982, by the then owner/operator of that facility, HOVIC, which was 15 years before the 1997 date cited in the comment.

Thirdly, as regards "measures have been taken to increase the probability of detecting a release", EPA notes that any above ground petroleum storage tanks at both St. Croix Alumina and HOVENSA must comply with the requirements of Section 311 (Oil and hazardous substance liability) of the Federal Water Pollution Control Act (also known as the "Clean Water Act"), 33 U.S.C. §1321, and the Oil Pollution Prevention requirements (i.e., Spill Prevention Control and Countermeasure Plan requirements) given at 40 C.F.R. Part 112 et seq.. Furthermore, any underground storage tanks (USTs) at St. Croix Alumina or HOVENSA must comply with the operating and release detection, as well as other requirements of 40 C.F.R. part 280. In addition, to those requirements, since 1994, HOVENSA and previously HOVIC, pursuant to corrective action requirements under its RCRA operating permit, have been required to implement a periodic testing and repair program for all petroleum storage tanks, underground pipelines, and underground process sewers at its facility. These requirements are implemented under EPA supervision, and are described in Condition III.A.4(c)1(ii) of HOVENSA's 1999 RCRA Operating Permit.

Comments (2) and (3) regard the definition of false positive and false negative decision error and their applicability to the RCRA release detection program.

EPA Response: These terms are not described or defined in the AOC, and since St. Croix Alumina does not operate a RCRA treatment, storage, or disposal unit; no RCRA release detection program, pursuant to 40 C.F.R. Part 264 or Part 265, is required at that facility.

Comments (4) and (5) regard the [St. Croix Alumina] release detection program.

EPA Response: As discussed above, St. Croix Alumina does not operate a RCRA treatment, storage, or disposal unit; therefore, no RCRA release detection program, pursuant to 40 C.F.R. Part 264 or Part 265 is required.

Comment (6) regards whether or not "... a release is still occurring at either of the facilities involved in the AOC."

EPA Response: The AOC only addresses clean-up of existing PSPH [oil] and DPPHC releases at the St. Croix Alumina facility. It does not address operating requirements for units at St. Croix Alumina. The operation of above-ground petroleum storage tanks at St. Croix Alumina are governed by Section 311 (Oil and hazardous substance liability) of the Federal Water Pollution Control Act (also known as the "Clean Water Act"), 33 U.S.C. §1321, and the Oil Pollution Prevention requirements (i.e., Spill Prevention Control and Countermeasure Plan requirements) at 40 C.F.R. Part 112 *et seq.* Operating requirements applicable to underground storage tanks (USTs) containing petroleum at St. Croix Alumina are given at 40 C.F.R. Part 280, and requirements applicable to St. Croix Alumina as a generator of hazardous waste are given at 40 C.F.R. Part 262.

Further, past or present releases at the HOVENSA facility are not addressed under the AOC. Those are being addressed under HOVENSA's 1999 RCRA Operating Permit, which requires comprehensive, facility-wide clean-up of past or present releases. As to release detection at HOVENSA, the 1999 RCRA Operating Permit includes extensive requirements for groundwater monitoring to detect any releases from: a) the facility's two operating and one closed hazardous waste treatment and disposal units and the facility's three non-hazardous waste waste-water treatment lagoons (surface impoundments), and b) verify that no contamination in the groundwater is migrating across the facility's north, west, or eastern boundary. In addition, a recurring program of periodic testing and repair program for all petroleum storage tanks, underground pipelines, and underground process sewers at the HOVENSA facility is required under the facility's 1999 RCRA Operating Permit.

Comment (7) queries what assurances are there that "it [will be] possible to decommission or repair all of the pipes and tanks associated with the release?"

EPA Response: The AOC does not require decommissioning or repair all of the pipes and tanks associated with the release. However, EPA has no evidence that releases are presently occurring from pipes and tanks at St. Croix Alumina. In addition, if as part of the Work to be Performed under Section XI of the AOC, EPA determines that releases are presently occurring from pipes and tanks at St. Croix Alumina, their repair can be required pursuant to Sections XII (Emergency Provisions) or XXIV (Reservation of Rights) of the AOC.

Also, as discussed previously, EPA believes that past or present releases at HOVENSA are no longer contributing to the PSPH or DPPHC plumes at St. Croix Alumina, since hydraulic control is being maintained along HOVENSA's property line with St. Croix Alumina. Secondly, as discussed above, past or present releases at the HOVENSA facility are not addressed under the AOC. Those are

being addressed under HOVENSA's 1999 RCRA Operating Permit, which requires comprehensive, facility-wide clean-up of past or present releases.

Comment (8) queries whether all of the sources of release [at the St. Croix Alumina facility] have been identified.

EPA Response: The purpose of the AOC is to clean-up the known PSPH [oil] and dissolved phase contamination underlying the St. Croix Alumina facility. EPA has identified likely past release sources at the St. Croix Alumina facility. Some of these likely past release sources have been removed prior to the AOC. Additional investigative work of the dissolved phase contamination (e.g. DPPHC) related to the PSPH plume will be conducted and such investigation may identify additional sources of release.

Comments (10) and (11): Queries who is responsible for defining on-site and off-site as regards a) contaminant migration, and b) discharge of treated groundwater, and c) whether the definitions will impact final clean-up levels.

EPA Response: On-site means within or underlying the St. Croix Alumina property. Off-site means outside of that property. As stated previously, EPA has no information, or reason to expect that contamination of PSPH [oil] and DPPHC under the SCA facility has impacted off-site areas. The surface waters adjacent to St. Croix Alumina are off-site. As to discharge of treated groundwater, EPA assumes the commentator means discharge via an TPDES outfall. That issue is addressed in the August 17, 2000 "Second Addendum to the Joint Technical Proposal" submitted to EPA. For a copy of the Second Addendum to the Joint Technical Proposal, please contact Timothy Gordon, at EPA, at (212) 637-4167.

As to the final clean-up levels, EPA's clean-up goal for the phase separated oil is to recover all of the underground oil that is technically practicable, utilizing conventional oil recovery technology. The clean-up goal for dissolved phase constituents, has not yet been fully defined, but will be defined as part of the work required under Section XI.B (DPPHC Work Plan) of the AOC. EPA's final clean-up goal for off-site contamination, if present, is to achieve a human health protectiveness level equivalent to 10^{-6} , i.e., a risk level of 1 in 1.0 million. For on-site contamination, EPA would be prepared to consider a protectiveness level equivalent to 10^{-6} to 10^{-4} ; however, in order to consider a 10^{-4} protectiveness level [a risk level of 1 in 100,000] for on-site contamination, appropriate long-term controls and/or monitoring would likely be required.

Comment (12): Queries whether the Government of the Virgin Islands will participate as a stakeholder in defining the final clean-up levels.

EPA Response: The Government of the Virgin Islands, as well as other interested members of the public, will have an opportunity to comment on final clean-up

levels, before such final clean-up levels are set by EPA. Additionally, pursuant to Section IX (Notices) of the AOC, the Department of Planning and Natural Resources (DPNR) of the Government of the Virgin Islands shall receive all work plans, reports, and correspondence generated under the AOC, which will allow the government to keep apprised of all developments regarding the AOC.

Comment (13): Implies that Paragraph 20 of the AOC indicates that the quality of the "Territories' groundwater" is not suitable for consumption or typical industrial uses, and queries whether a list of contaminants of concern (COC) will be developed.

EPA Response: As written in the AOC, Paragraph 20 only describes "The natural background water quality of the groundwater **beneath the [St. Croix Alumina] Facility...**[emphasis added here] ." Also, as discussed above in EPA's responses to comments from Mr. Syed Syedali of the DPNR, the statement in paragraph 20 of the AOC is based on information supplied by the present and former owners and operators of both the alumina facility and the adjacent HOVENSA [formerly HOVIC] oil refinery, as well as information in the "Atlas of Ground-Water Resources in Puerto Rico and the U.S. Virgin Islands", U. S. Geological Survey Water-Resources Investigation Report 94- 4198, dated 1996 ("the Ground-Water Atlas"). For example, in Section 4.7.2 of the Ground-Water Atlas, on page 145, it is stated "The Kingshill Marl provides most of the ground water for St. Croix, but the overall quality is poor. The water exceeds the EPA secondary drinking water standards for dissolved solids and chloride; median concentrations are 1,440 mg/L and 560 mg/L respectively." EPA believes that the AOC is accurate in indicating that the natural "ate of the groundwater underlying and down-gradient of the PSPH plume at the St. Croix Alumina facility, prior to any treatment processes being applied, is not usable for either consumption or typical industrial uses.

As to the comment regarding whether a list of contaminants of concern (COC) will be developed, a list of COCs will be developed as part of the DPPHC workplan required pursuant to Section XI.B (DPPHC Work Plan) of the AOC.

Comment (14): Queries how will final clean-up levels be determined and what type of chemical analysis will be performed, and whether a list of specific COCs will be developed and will specific levels (concentrations) be utilized..

EPA Response: See EPA response to Comments 10, 11 and 13, above.

Comment (15): Queries how human health and ecological risk will be assessed, and will risk assessment influence the final clean-up levels, and consider synergistic effects.

EPA Response: As discussed previously in our response to comments (10) and (11), the final clean-up goal for the phase separated oil, is to recover all of the underground oil that is technically practicable, utilizing conventional oil recovery technology. The final clean-up levels for dissolved phase petroleum hydrocarbon constituents, which are the only dissolved constituents subject to the AOC, will be risk-based clean-up levels, which are to be determined as part of the DPPHC workplan required pursuant to Section XI of the AOC. Synergistic effects from dissolved phase petroleum hydrocarbon constituents, if indicated to be expected, will be evaluated. Human health and ecological risk and the risk-based clean-up levels will be assessed and determined pursuant to procedures given in EPA guidance documents such as:

Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part A) (Interim Final), dated 1989, EPA publication EPA/540/1-89/002.

Risk Assessment Guidance for Superfund Volume I Human Health Evaluation Manual (Part B, Development of Risk-Based Preliminary Remediation Goals) (Interim), dated 1991, EPA publication PB92-963333.

Ecological Risk Assessment Guidance for Superfund: Process for Designing and Conducting Ecological Risk Assessments (interim Final), dated 1997, EPA publication EPA/540/R-97-006.

Comment (16): Queries the reason for the disparity between the lower and upper estimate of the total amount of released PSPH [oil].

EPA Response: Estimates of the volume of the released PSPH [oil] underlying the SCA facility range between 907,500 gallons (21,607 barrels) to 2.9 million gallons (71,038 barrels) of PSPH [oil], and are based on well measurements and groundwater modeling studies. The wide range in estimated volumes is due to varying assumptions regarding the magnitude and distribution of formation porosity and permeability. The volume of groundwater degraded by the DPPHC has not yet been fully quantified, but will be done as part of the DPPHC workplan required pursuant to Section XI of the AOC.

Comment (17): Queries the total volume of groundwater extracted thus far as part of the remediation at HOVENSA [formerly HOVIC].

EPA Response: EPA does not track the cumulative volume of groundwater extracted as part of the remediation at HOVENSA [formerly HOVIC]. However, based on the most recent data available (December 2000), the volume of water currently being extracted as part of the remediation activities at HOVENSA,

averaged 325,752 gallons (7,756 barrels) per day, along with an average of 6762 gallons (161 barrels) of PSPH [oil] per day. In other words, for every one gallon of PSPH [oil] recovered, 48.2 gallons of water are extracted. Also, the remediation activities at HOVENSA are not part of this AOC.

Comment (18): Queries the total volume of groundwater expected to be extracted as part of the remediation at the SCA facility.

EPA Response: EPA's review of information/documentation submitted to it by respondents indicates that the initial volume of total fluids (PSPH [oil] and groundwater) expected to be extracted as part of the remediation at the SCA facility is 33,600 gallons per day, of which EPA estimates, initially approximately 10 percent will be PSPH [oil]. Therefore, approximately 30,240 gallons of groundwater per day (90 percent of the total fluid volume recovered) are initially expected to be extracted as part of the remediation at the SCA facility. Over time, however, the relative volume (or percentage) of groundwater expected to be extracted versus the volume of PSPH [oil] recovered will increase, as the PSPH [oil] layer decreases in thickness.

Comment (19): Queries whether the volume of groundwater expected to be extracted as part of the remediation at the SCA facility and the pumping rate of that groundwater extraction will impact the surrounding groundwater.

EPA Response: EPA has not performed analysis to evaluate the impact that groundwater extraction at the SCA facility as part of the remediation under the AOC would have on the surrounding groundwater aquifer. However, as discussed above, the volume of groundwater expected to be extracted as part of the remediation at the SCA facility is 30,240 gallons/per day, which volumetrically, considering the entire aquifer, is not a volume likely to adversely impact the upgradient portions of the aquifer. As a frame of reference in regards to volumes of groundwater extracted from the [Kingshill] aquifer, EPA notes that based on data given in the "Ground Water Atlas" [on page 134] cited previously, the volume of groundwater formerly extracted from the [Kingshill] aquifer at the nearby Barren Spot well field averaged 291,900 gallons per day in September through November, 1990, the most recent data available to EPA. Likewise, based on data given in the "Ground Water Atlas", the volume of groundwater extracted at the Fairplain well field areas (including Adventure, Golden Grove, Negro Bay, and areas north of the [Henry E. Rohlsen] airport), located approximately 1 to 2 miles west of the PSPH [oil] plume at the SCA facility, averaged 417,200 gallons per day in September through November, 1990, the most recent data available to EPA. Accordingly, EPA believes the volume of planned groundwater extraction at the SCA facility as part of the remediation under the AOC is unlikely to have an adverse impact on the upgradient portions of the [Kingshill] aquifer. However, as part of the work required under Section XI (Work to be Performed) of the AOC, EPA will request that an evaluation be performed by the respondents to determine

if the volume of groundwater extracted at SCA could adversely impact the upgradient portions of the [Kingshill] aquifer.

6. Unsigned Letter from "A concerned citizen", dated January 31, 2001

Comment 1: Alleges that it is not possible to recover the hydrocarbons subject to the AOC in a reasonable time period.

EPA Response: As discussed previously, the initial estimated volume of total fluids (PSPH [oil] and groundwater) expected to be extracted as part of the remediation at the SCA facility is 33,600 gallons per day, of which EPA estimates, initially approximately 10 percent will be PSPH [oil]. Therefore, approximately 3,360 gallons of PSPH [oil] per day are initially expected to be extracted as part of the remediation at the SCA facility. Based on that rate of recovery, up to 1.226 million gallons of PSPH [oil] could be recovered per year. While, EPA recognizes that the percentage of PSPH [oil] to be recovered will decrease with time; the expected initial recovery rate indicates that the PSPH [oil] at the SCA facility could reasonably be expected to be recovered in the 4 to 5 year time-frame currently envisioned. Also, recovery from six wells is the initial program. If that is not sufficient, under the AOC EPA could require additional recovery wells, or other measures.

Comment 2: Alleges a) that HOVENSA is pumping 1.3 million gallons of groundwater per day as part of the hydrocarbon recovery activities at its facility and is concerned about this "massive removal of precious groundwater and a depression of the upper aquifer [water table]...", and b) that "the [HOVENSA??] hydrocarbon volume now affects four Estates on the south shore of the island."

EPA Response: In regards to comment a): As discussed above in EPA's response to Senator Cole's letter, based on the most recent data available (December 2000) to EPA, the volume of water currently being extracted as part of the remediation activities at HOVENSA, averaged 325,752 gallons (7,756 barrels) per day, not 1.3 million gallons per day. As to the concerns regarding massive removal of precious groundwater and a depression of the upper aquifer [water table], EPA in 1997 requested that HOVIC [owner/operator of the oil refinery at that time], gauge [measure the elevation of the water table] all private and public wells in the area of its facility (where access was allowed by the wells' owners) and prepare a map of the regional water table in the vicinity of its facility, in order to assess if there was any reversals in the natural hydraulic gradient in the Kingshill aquifer as a result of groundwater extraction at their facility and/or at the Barren Spot well field, located immediately north of the HOVIC facility, and/or at the "Shuster well field" (a private well field) located immediately northeast of the HOVIC facility. The results of that mapping were submitted to EPA by HOVIC on January 1, 1998, and no reversals in the natural [southward] hydraulic gradient of the Kingshill aquifer, as a result of groundwater extraction at the HOVIC facility, were indicated. Also, as noted previously the remediation activities at HOVENSA are not part of this AOC.

In regards to comment b): The commentor did not identify the four [housing] Estates to which his/her letter refers as being affected by the plume. Although unclear, EPA is aware of one Estate, called Estate Figtree, which is located on the HOVENSA property, where an underground PSPH [oil] plume exists. EPA tracks the PSPH [oil] plumes at HOVENSA very closely. The most recent data, which was submitted in February 2001, has no information indicating that the PSPH [oil] plumes at HOVENSA are currently migrating off-site. Nevertheless, as mentioned above, there is an underground PSPH [oil] plume beneath the Estate Figtree area, which is inside the HOVENSA facility's perimeter fence, wholly on HOVENSA owned property, and utilized for housing for HOVENSA's employees and/or contractor employees. However, that plume is: 1) wholly within the boundaries of the HOVENSA facility, 2) being actively contained and remediated under EPA oversight, and (3) based on a human health risk evaluation study (report dated August 1998), performed by HOVENSA at EPA's request, the Estate Figtree area's underground PSPH [oil] plume is not indicated to pose any risk to the health of HOVENSA employees that reside at Estate Figtree, or to off-site residents.

Comment 3: Also concerns whether adverse impacts have/will result from excessive groundwater extraction at HOVENSA and/or St. Croix Alumina.

EPA Response: See EPA's response to comment 2 above, and also EPA's response to Comment 19 of Senator Cole's February 14, 2001 letter.

Specific Requests made by the "Concerned Citizen" include requests for:

1. An impact study [of the groundwater extraction?].

EPA Response: See EPA's response to comments 2 and 19, above.

2. Realistic projections for the duration and quantity of the [groundwater] pumping required to remove the hydrocarbon [at St. Croix Alumina].

EPA Response: The estimate of the duration of the PSPH [oil] [hydrocarbon] recovery project at St. Croix Alumina, which is required under the AOC, is 4.5 years. That estimate, which EPA considers realistic for the PSPH [oil] recovery phase of the work, was provided in the May 26, 2000 First Addendum to the "Joint Technical Proposal", which EPA required as part of the negotiations leading to the development of an acceptable AOC. The May 26, 2000 First Addendum as well as the full "Joint Technical Proposal" were available for inspection by the public (at DPNR's offices in St. Croix and EPA's office in St. Thomas) during the Public Comment Period.

3. Establishment of water recharge ponds north of St. Croix Alumina and HOVENSA.

EPA Response: As discussed previously on page 3, in EPA's Response to Specific Comment number 4 of the letter dated January 26, 2001 from Mr. Syed Syedali, of the

Department of Planning & Natural Resources (DPNR) of the Government of the Virgin Islands, and on page 15, in EPA's Response to Specific Comment number 13 of the February 14, 2001 letter from Senator Donald G. Cole of the Legislature of the Virgin Islands, in its natural state, the groundwater which will be extracted as part of the clean-up required under the AOC for the PSPH [oil] and DPPHC contamination at St. Croix Alumina is not usable for potable water supplies, due to the naturally occurring elevated dissolved solids and salinity [chlorides] contents of that water. Therefore, establishment of water recharge ponds north of St. Croix Alumina is not warranted as part of the clean-up of the PSPH [oil] and DPPHC contamination required under the AOC. As discussed previously, clean-up activities at HOVENSA are not part of this AOC; however, the groundwater being extracted as part of the clean-up at HOVENSA is likewise not usable in its natural state for potable water supplies, due to the naturally occurring elevated dissolved solids and salinity [chlorides] contents of that water.

4. Include water resource management procedures [in the requirements of the AOC].

EPA Response: See EPA's response to previous Comment number 3.

5. Up front project timetables must be included.

EPA Response: The project schedule given in Table 1 of the HOVIC "St. Croix Alumina Hydrocarbon Recovery Plan, which was originally submitted to EPA on February 5, 1997, and was incorporated into the May 26, 2000 First Addendum to the "Joint Technical Proposal", discussed in EPA's response to item 2 above, is considered by EPA to be an acceptable project timetable, subject to the total estimated project time [duration] and "System Startup" date being adjusted pursuant to the May 26, 2000 First Addendum, and the requirements of the AOC. The May 26, 2000 First Addendum as well as the full "Joint Technical Proposal", including the February 5, 1997 original HOVIC proposal "St. Croix Alumina Hydrocarbon Recovery Plan" and Table 1, were available for inspection by the public (at DPNR's offices in St. Croix and EPA's office in St. Thomas) during the Public Comment Period. As part of the work required under paragraph 42 (PSPH Plume Remediation) of the AOC, EPA will require the respondents to submit an updated project schedule reflecting all adjustments pursuant to the May 26, 2000 First Addendum, and the requirements of the AOC.